LIST OF CONTENTS

Number 1

SPECIAL ISSUE

DEFECTS AND IMPURITY CENTERS IN IONIC CRYSTALS: OPTICAL AND MAGNETIC PROPERTIES. PART 2

P. W. M. Jacobs and **G. J. Dienes** v Preface

D. *Investigative techniques* (*continued*)
J.-M. Spaeth and **F. K. Koschnick** 1 Electron nuclear double resonance of intrinsic and impurity centers in ionic crystals

E. *Particular systems*
P. W. M. Jacobs 35 Alkali halide crystals containing impurity ions with the ns^2 ground-state electronic configuration

Taiju Tsuboi and **P. W. M. Jacobs** 69 Optical studies of s^2-ion dimer centers in alkali halide crystals

D. S. McClure and **S. C. Weaver** 81 Electronic spectra and electronic structure of the Cu^+ ion in alkali halides

J. Rubio O. 101 Doubly-valent rare-earth ions in halide crystals

D. J. Simkin 175 Transition-metal and rare-earth ions in beta-alumina type materials

O. F. Schirmer, O. Thiemann and **M. Wöhlecke** 185 Defects in $LiNbO_3$—I. Experimental aspects

H. J. Donnerberg, S. M. Tomlinson and **C. R. A. Catlow** 201 Defects in $LiNbO_3$—II. Computer simulation

Ravindra Pandey and **S. Sivaraman** 211 Spectroscopic properties of defects in alkaline-earth sulfides

A. Kasi Viswanath and **S. Radhakrishna** 227 EPR and optical properties of impurity centers in low-symmetry crystals

F. *Applications*
W. Gellermann 249 Color center lasers

P. Fabeni, G. P. Pazzi and **L. Salvini** 299 Impurity centers for tunable lasers in the ultraviolet and visible regions

P. W. Levy 319 Radiation damage studies on non-metals utilizing measurements made during irradiation

Number 2

S. Fujita and **A. Garcia** 351 Theory of hydrogen diffusion in metals. Quantum isotope effects

U. Sliwczuk, R. H. Bartram, D. R. Gabbe and **B. C. McCollum** 357 Raman scattering of chromium-doped halide elpasolite crystals

U. Sliwczuk, A. G. Rinzler, L. A. Kappers and **R. H. Bartram** 363 Pressure dependence of Raman scattering by chromium-doped halide elpasolite crystals

H. Dai and **O. M. Stafsudd**	367	Polarized absorption spectrum and intensity analysis of trivalent neodymium in sodium β'' alumina
R. Benloucif, N. Nguyen, J. M. Greneche and **B. Raveau**	381	$La_{2-x}Sr_xNi_{1-y}Fe_yO_{4-[(x-y)/2]+\delta}$: relationships between oxygen non-stoichiometry and magnetic and electron transport properties
R. S. Bansal, V. P. Seth, P. Chand and **S. K. Gupta**	389	EPR and optical spectra of vanadyl ion (impurities) in three polycrystalline solids
W. Lengauer	393	Thermochemistry of the formation of nitrogen-rich surface layers on transition metal nitrides: a study of the VN_{1-x}–N_2 couple
M. Oguro and **R. W. Whitworth**	401	Dielectric observations of the transformation of single crystals of KOH-doped ice Ih to ice XI
G. Mayer	405	High temperature elastic anomaly in germanium
K. Sakamaki, A. Fujishima and **Y. Onuki**	409	Definitive structure of a stacking boundary of charge density waves in 1T-TaS_2 using a scanning tunneling microscope
J. Sytsma, W. van Schaik and **G. Blasse**	419	Vibronic transitions in the emission spectra of Gd^{3+} in several rare-earth compounds
I. L. Botto, E. J. Baran, C. Cascales, I. Rasines and **R. Saez Puche**	431	Correlation between structural and vibrational properties of the $Ln_3Sb_5O_{12}$-type oxides
W. Kucharczyk	435	Pressure dependence of effective ionic charges in alkali halides
V. Hadjicontis and **K. Eftaxias**	437	Temperature and pressure variation of self-diffusion of Ge in relation to the bulk properties
X. Liu and **C. T. Prewitt**	441	High-temperature diffraction study of $LnCoO_3$ perovskites: a high-order electronic phase transition
A. Watterich, G. J. Edwards, O. R. Gilliam, L. A. Kappers, D. P. Madacsi, K. Raksányi and **R. Voszka**	449	ESR of platinum impurity ions in $ZnWO_4$ single crystals
S. K. Sipani and **V. P. Gupta**	457	A study of dielectric behaviour of alkali halides under hydrostatic pressure using the Rydberg potential
		Technical Note
S. Mitra, J. P. Stark and **S. R. Tatti**	463	On the use of the Boltzmann–Matano analysis to deduce concentration-dependent diffusivity

Number 3

S. E. Sigaryov and **A. B. Vasiliev**	467	Disorder of PO_4 tetrahedra and ionic conductivity of $Na_3In_2(PO_4)_3$
Y. Bensimon, P. Belougne, B. Deroide, J. C. Giuntini et **J. V. Zanchetta**	471	Etude de la conductivité électrique dans les sulfures de molybdène amorphes
M. Lambrigger	479	Concentration waves in Ni–Ti (11.8 at.%) alloys studied by high resolution X-ray diffractometry
A. K. Wong	483	A non-adiabatic thermoelastic theory for composite laminates
A. J. Campbell and **D. L. Heinz**	495	Compression of KCl in the B2 structure to 56 GPa

C. S. Chu and R. S. Sorbello — 501 Relaxation-time dependence of the driving force in electromigration

T. P. Mernagh and Lin-gun Liu — 507 Pressure dependence of Raman phonons of some group IVA (C, Si, and Ge) elements

O. K. Moune, D. Garcia and M. Faucher — 513 Improvement of the parametric simulation of energy levels in erbium compounds

M. Jiménez-Melendo, A. Domínguez-Rodríguez and J. Castaing — 517 Up-quenching and diffusional transitory creep of non-stoichiometric NiO

K. Eftaxias, V. Hadjicontis and C. Varotsos — 523 Calculation of diffusion coefficients of nitrogen in vanadium

P. Manoravi and K. Shahi — 527 Fast ion transport and phase diagram of the KBr–NaI system

C. Sourisseau, R. Cavagnat and M. Fouassier — 537 The vibrational properties and valence force fields of FeS_2, RuS_2 pyrites and FeS_2 marcasite

J.-H. Choy, W.-Y. Choe and D.-Y. Jung — 545 A spectroscopic study on the existence of Cu^{3+} or O_2^{3-} in the superconducting $YBa_2Cu_{3-x}Co_xO_{7\pm\delta}$ phase

Technical Notes

T. Shibata, Y. Muranushi, T. Miura and T. Kishi — 551 Electrical characterization of 2H–SnS_2 single crystals synthesized by the low temperature chemical vapor transport method

Zheng Wen-Chen — 555 Theoretical calculation of the spin-lattice coupling coefficients for $KMgF_3:Mn^{2+}$ crystal

557 Announcement

Number 4

Yu. I. Vesnin — 559 Equilibrium solid state solubility and the solvus equation of binary systems

M. Dominguez, J. Vázquez, P. Villares and R. Jiménez-Garay — 567 A study on short-range order in some alloys of the Cu–As–Se glassy system by X-ray radial distribution analysis

F. Rabago, J. M. Martin, A. B. Vincent and N. V. Joshi — 575 Photoconductivity and optical absorption on the high energy side in an Se treated ZnSe monocrystal

H.-W. Jeon, H.-P. Ha, D.-B. Hyun and J.-D. Shim — 579 Electrical and thermoelectrical properties of undoped Bi_2Te_3–Sb_2Te_3 and Bi_2Te_3–Sb_2Te_3–Sb_2Se_3 single crystals

O. L. Malta, S. J. L. Ribeiro, M. Faucher and P. Porcher — 587 Theoretical intensities of $4f$–$4f$ transitions between stark levels of the Eu^{3+} ion in crystals

S. J. Butcher and N. W. Thomas — 595 Ferroelectricity in the system $Pb_{1-x}Ba_x(Mg_{1/3}Nb_{2/3})O_3$

M. El-Said and M. Tomak — 603 Photoionization of impurities in infinite-barrier quantum wells

K. Takeda, O. Yamamuro and H. Suga — 607 Thermodynamic study of 1-butene. Exothermic and endothermic enthalpy relaxations near the glass transition

H. Abe and S. Kawada — 617 The dependency of dielectric relaxation time on alkali metal ion (Li^+, Na^+, K^+, Rb^+) in alkali-hydroxide-doped ice

L. H. Brixner and **G. Blasse** 623 X-Ray excited emission spectroscopy of Gd^{3+} in some $ATaO_4$ compounds

F. Blatter and **K. W. Blazey** 629 Conductance electron spin resonance of Pd and PdH_x particles in zeolite NaY

Technical Notes

H. Schlosser and **J. Ferrante** 635 The analysis of high pressure experimental data

P. K. Chakraborty 639 Effect of Landau levels in energy bands on tunneling in semiconductors

Number 5

O. El-Shazly and **A. I. Abou-Aly** 643 Transport properties of stage 6 of $FeCl_3$ graphite intercalation compounds

Hefeng Li, Zhengmin Fu and **Kunquan Lu** 647 EXAFS and X-ray diffraction study on the structure of $Ba_xSr_{1-x}Nb_2O_6$

M. M. Abdel-Kader, F. El-Kabbany, S. Taha, A. M. Abosehly, K. K. Tahoon and **A. A. El-Sharkawy** 655 Thermal and electrical properties of ammonium tartrate

Zeng Zuotao 659 Coordination chemistry and superconductivity

M. Barrio, J. Font, D. O. López, J. Muntasell, J. Ll. Tamarit, N. B. Chanh and **Y. Haget** 665 Determination of an intermediate cubic phase in the PE/NPG binary system by X-ray powder diffraction

K. L. Tan, B. T. G. Tan, S. H. Khor, K. G. Neoh and **E. T. Kang** 673 The effects of synthesis conditions on the characteristics and chemical structures of polyaniline: a comparative study

M. Gałczyński and **W. Stręk** 681 Concentration dependence of absorption spectra of Pr^{3+} in $LiLa_{1-x}Pr_xP_4O_{12}$ crystals

J. Lech, A. Ślęzak and **R. Hrabański** 685 EPR of Mn^{2+} in $[Co(H_2O)_6](ClO_4)_2$ single crystals: estimation of Co^{2+} spin-lattice relaxation time

K. J. Maxwell and **R. J. Turner** 691 Optical studies of the $(^4A_2 \times {}^2A_1)$ and $(^4A_2 \times {}^2T_2)$ singly-excited dimer states of $Cs_3Cr_2Br_9$

B. C. Chan and **C. K. Ong** 699 Electronic structure of the reconstructed InP(100) surface

C. K. Ong and **K. C. Low** 705 Surface states of GaP (110)

T. Scimeca 709 Soft X-ray emission study on radiation damage of beryl and SiO

U. Anselmi-Tamburini, P. Ghigna, G. Spinolo and **G. Flor** 715 Solid state synthesis of $YBa_2Cu_3O_{7-x}$: mechanisms of $BaCuO_2$ formation

H. Yasuda and **M. Koiwa** 723 Determination of elastic constants of single crystals with cubic symmetry by the rectangular parallelepiped resonance method

M. Kitamura and **H. Chen** 731 Calculation of the *K*-absorption edge and its chemical shift of common metals

Number 6

D. P. Bhattacharya and **T. K. Pramanik** — 735 Effect of finite energy of deformation-potential acoustic phonons on the temperature of non-equilibrium carriers

C. L. Roy and **Chandan Basu** — 745 A relativistic treatment about the existence of band gaps in one-dimensional disordered systems

J. E. Jaffe, Ravindra Pandey and **A. B. Kunz** — 755 Correlated Hartree–Fock electronic structure of ZnO and ZnS

Shoichi Nagata, Shuji Ebisu, Tsuyoshi Aochi, Yasuhiro Kinoshita, Susumu Chikazawa and **Kazuhiko Yamaya** — 761 Superconductivity in the filamentary conductor $TaSe_3$

V. Rodriguez, M. Couzi and **C. Sourisseau** — 769 Valence force fields of the ordered fluoride $CoZrF_6$ in the cubic and rhombohedral phases

J. P. Burger, P. Vajda and **J. N. Daou** — 779 Study of structural ordering, Kondo effects and magnetism in CeH_{2+x} with $0 \leqslant x \leqslant 0.65$, through electrical resistivity measurements

H. Raffius, E. Mörsen, B. D. Mosel, W. Müller-Warmuth, T. Hilbich, M. Reehuis, T. Vomhof and **W. Jeitschko** — 787 ^{57}Fe Mössbauer spectroscopy and some complementary measurements of various ternary iron phosphides

L. Kovács, M. Wöhlecke, A. Jovanović, K. Polgár and **S. Kapphan** — 797 Infrared absorption study of the OH vibrational band in $LiNbO_3$ crystals

D. Grientschnig and **W. Sitte** — 805 Interpretation of ionic transport properties of some silver chalcogenides

Yanhua Zhou, Andrew J. Campbell and **Dion L. Heinz** — 821 Equations of state and optical properties of the high pressure phase of zinc sulfide

Milind Vaidya and **P. H. Umadikar** — 827 Magnetic and Mössbauer studies of Sn substituted rare earth iron garnets

833 Announcement

Number 7

Jinzuo Sun — 835 Dependence of the energies and the wave functions of the extended states on the phase in one-dimensional incommensurate systems

A. N. Petrov, A. Yu. Zuev and **V. A. Cherepanov** — 841 Oxygen nonstoichiometry of lanthanum strontium cuprates $La_{2-x}Sr_xCuO_{4-\delta}$

K. Kusaba, K. Fukuoka and **Y. Syono** — 845 Shock-induced phase transition in SnO_2, PbO_2 and $FeTaO_4$

B. Deroide, Y. Bensimon, P. Belougne and **J. V. Zanchetta** — 853 Lineshapes of ESR signals and the nature of paramagnetic species in amorphous molybdenum sulfides

R. H. Chen, S. C. Yang and **Li-Ming Wang** — 859 X-ray diffraction studies of twinning in $KNaSO_4$ and $K_3Na(SO_4)_2$ crystals

T. H. Ansari and R. A. Singh — 865 Electrical conduction in cobalt molybdate

Zheng Wen-Chen — 871 Determination of the local compressibility of the $(Al \cdot 6H_2O)^{3+}$ group in $AlCl_3 \cdot 6H_2O$ from the pressure and stress dependences of EPR spectra for substituting Cr^{3+} and Fe^{3+} ions

Zheng Wen-Chen — 875 Investigation of the stress dependence of the EPR spectrum for $Y_3Ga_5O_{12}:Cr^{3+}$

R. Saravanan, S. K. Mohanlal and K. S. Chandrasekaran — 879 Anomalous dispersion effects, anharmonic thermal vibrations and bonding charges in indium antimonide

W. G. Zeng, C. C. Lam, P. C. W. Fung, K. W. Wong, S. T. Tang, C. J. Tong and Y. Y. Luo — 887 A new mixed phase ceramic superconductor based on the Y–Ba–Cu–O system with addition of tellurium

K. Chhor, C. Pommier, P. Garnier and L. Abello — 895 Low temperature behaviour of α-PbO and $Pb_{1-x}Ti_xO_{1+x}$ oxides from calorimetric, spectroscopic and neutron diffraction studies

J. Llopis, R. Vila and A. Ibarra — 903 Photoluminescent characterization of zirconia-toughened alumina (ZTA) ceramics

Chi-Chang Kao and R. P. Merrill — 909 A simple model for the calculation of the extra-atomic relaxation energies in ionic solids

Technical Note

M. Lambrigger — 913 Strain and substitution X-ray scattering of $Ni_{0.882}Ti_{0.118}$ with concentration waves in the ⟨100⟩ direction

Number 8

D. I. Desnica, M. Kranjčec and B. Čelustka — 915 Optical absorption edge and Urbach's rule in mixed single crystals of $(Ga_xIn_{1-x})_2Se_3$ in the indium rich region

A. D. Vishnoi, V. B. Sapre and C. Mande — 921 Tungsten *L* absorption spectra in some rare earth tungstates

N. V. Joshi and A. Serfaty — 927 Linear and sublinear photoresponse of CdS photodetector: a reevaluation

S. Raju, E. Mohandas and V. S. Raghunathan — 931 Energetic considerations of ternary element substitution in γ-TiAl

B. C. Joshi, M. C. Joshi and B. D. Joshi — 939 Energy transfer from Mn^{2+} to Pr^{3+} in phosphate glass

R. Ruppin — 941 Grüneisen parameters of a cracked solid

D. Cahen and R. Noufi — 947 Free energies and enthalpies of possible gas phase and surface reactions for preparation of $CuInSe_2$

P. J. Sebastian — 963 Ageing studies on CdSe thin films under ambient conditions

K. J. D. MacKenzie, C. M. Cardile and R. H. Meinhold — 969 The preparation and properties of antimony-substituted dicadmium stannates

P. J. Alonso, R. Alcalá, R. Usón and J. Forniés — 975 EPR study of mononuclear Pt(III) organometallic complexes

K. C. Tsui, P. C. W. Fung, H. L. Tam and G. O. Walker — 979 Detection of superconducting transitions of multi-phase (Bi,Pb)–Sr–Ca–Cu–O ceramics by photothermal deflection technique

S. Watanabe and **S. Fujita**	985	On the angular dependence of the cyclotron resonance peaks in lead
K. Takeda, M. Oguni and **H. Suga**	991	Thermo-analytical study of vapor-deposited *n*-alkanes
G. Massé, K. Djessas and **F. Guastavino**	999	Study of $CuGa_xIn_{1-x}Se_2$ and $CuGa_xIn_{1-x}Te_2$ compounds
B. Silvi, N. Fourati, R. Nada and **C. R. A. Catlow**	1005	Pseudopotential periodic Hartree–Fock study of rutile TiO_2
R. Nakata, T. Nakajima, K. Kawano and **M. Sumita**	1011	ESR studies of Mn^{2+} centres in $Ca_{1-x}Sr_xF_2$:Mn crystals
K. C. King and **T. Mura**	1019	The eigenstrain method for small defects in a lattice
K. Biedrzycki	1031	Excitation of electric discharges (light emission) at the Rochelle salt surface by electric fields with low and high frequencies
		Technical Notes
J. Krustok, A. Lôo and **T. Piibe**	1037	Deep-level photoluminescence of doped CdTe in the 0.8 eV region
A. Halperin and **E. W. Sucov**	1039	Single irradiation excitation of the thermoluminescence (TSL) related to the $[SiO_4/Na]^\circ$ center in quartz
	1041	Announcement

Number 9

W. Ryba-Romanowski, S. Gołąb, J. Hanuza, M. Mączka, A. Pietraszko, M. Berkowski and **A. Pajączkowska**	1043	Optical study of $CaNdAlO_4$
K. Santra and **C. K. Sarkar**	1051	The effect of non-parabolicity on the energy loss rate of hot electrons in narrow gap semiconductors in the extreme quantum limit at low temperatures
R. D. Shannon and **G. R. Rossman**	1055	Dielectric constant of $MgAl_2O_4$ spinel and the oxide additivity rule
R. E. Wagner and **A. Mandelis**	1061	A generalized calculation of the temperature and Drude photo-modulated optical reflectance coefficients in semiconductors
J. L. Hock and **R. B. McQuistan**	1071	Constant-coverage, configurational heat capacities for two-dimensional, hexagonal-cell Ising lattices
E. Lifshitz, R. Clement, L. C. Yu-Hallada and **A. H. Francis**	1081	Preparation and photoluminescence characterization of $Ru(bipy)_3^{2+}$ intercalated $Cd_2P_2S_6$
A. R. Moon and **M. R. Phillips**	1087	Defect clustering in H,Ti: α-Al_2O_3
Shripal, R. P. Tandon and **S. D. Pandey**	1101	Electrical conductivity and EPR investigations in iron doped polycrystalline $K_2Ti_4O_9$
Dan Teng, Jun Shen, K. E. Newman and **Bing-Lin Gu**	1109	Effects of ordering on the band structure of III–V semiconductors
C. P. Herrero and **J. Sanz**	1129	Short-range order of the Si,Al distribution in layer silicates
R. S. Sinkovits and **R. H. Bartram**	1137	Computer modeling of lattice dynamics in halide elpasolites
A. M. Sherry and **M. Kumar**	1145	Analysis of thermal expansion for alkali halide crystals using the isobaric equation of state
D. van der Voort and **G. Blasse**	1149	Anomalous rare-earth emission in magnesium fluoroborate

A. Lichanot, M. Gelize, C. Larrieu and **C. Pisani** 1155 Hartree–Fock *ab initio* study of relaxation and electronic structure of lithium oxide slabs

A. Simon, J. Ravez, M. P. Crosnier, Y. Piffard and **M. Tournoux** 1165 Dielectric relaxation in a ferroelectric ceramic with the composition $KSbOSiO_4$

S. Nakashima, A. Nishimori, Y. Masuda, H. Sano and **M. Sorai** 1169 ^{57}Fe Mössbauer, i.r. and Raman spectra and heat capacity of the mixed-valence complex, 1′,1‴-diethylbiferrocenium triiodide, showing fusion type averaging process of the mixed-valence state

D. M. Adams, S. Leonard, D. R. Russell and **R. J. Cernik** 1181 X-ray diffraction study of hafnia under high pressure using synchrotron radiation

A. Bhattacharjee and **B. Mallik** 1187 Adsorption-induced electrical conductivity of ferrocene: rates of adsorption and desorption of vapors

Technical Note

V. W. L. Chin 1193 Calculations of the electron mobility of $InAs_xP_{1-x}$

1197 Announcement

Number 10

SPECIAL ISSUE

SYNCHROTRON RADIATION AND INORGANIC CRYSTALLOGRAPHY

C. R. A. Catlow and **P. Pattison** v Preface

A. K. Cheetham and **A. P. Wilkinson** 1199 Structure determination and refinement with synchrotron X-ray powder diffraction data

M. A. Roberts and **A. N. Fitch** 1209 The crystal structures of $Ag_4Ge_7O_{16}\cdot 6D_2O$ and $Na_3(ND_4)Ge_7O_{16}\cdot 6D_2O$ refined from high resolution synchrotron radiation and neutron powder diffraction data

Z. A. Kaszkur, R. H. Jones, J. W. Couves, D. Waller, C. R. A. Catlow and **J. M. Thomas** 1219 Locating the sites of sorbed chloroform and dichlorobenzene in a zeolite solid: a synchrotron-based diffraction study of zeolite Y at room temperature

Yan Xu, J. W. Couves, R. H. Jones, C. R. A. Catlow, G. N. Greaves, Jiesheng Chen and **J. M. Thomas** 1229 X-Ray absorption studies of framework-substituted aluminium phosphate and silico-aluminium phosphate molecular sieves: the environment of nickel in NiAPO-5 and NiAPSO-34

H. Gies, B. Marler, C. Fyfe, G. Kokotailo, Y. Feng and **D. E. Cox** 1235 The combination of synchrotron powder diffraction and high-resolution solid-state NMR experiments

J. P. Attfield 1243 Resonant powder X-ray diffraction applied to mixed valence compounds and the possibility of site-resolved X-ray absorption spectroscopy illustrated for $YBa_2Cu_3O_{6.27}$

J. K. Warner, A. P. Wilkinson, A. K. Cheetham and **D. E. Cox** 1251 Comparative study of elemental contrast by resonant X-ray and neutron powder diffraction

A. P. Wilkinson, D. E. Cox and **A. K. Cheetham** 1257 Some aspects of the collection and analysis of powder diffraction data near X-ray absorption edges; resonant diffraction studies of the garnets $Y_3Fe_5O_{12}$ and $Y_3Ga_5O_{15}$

P. Coppens, P. Lee, Yan Gao and **Hwo-Shuenn Sheu** 1267 Application of the selective atom diffraction method to the cation distribution in high T_c bismuth cuprates

J. A. Hriljac, J. B. Parise, G. H. Kwei and **K. B. Schwartz** 1273 The *ab initio* crystal structure determination of $CuPt_3O_6$ from a combination of synchrotron X-ray and neutron powder diffraction data

J. M. Newsam, C. Z. Yang, H. E. King Jr, R. H. Jones and D. Xie — 1281 — Experiences in studying zeolites and related microporous materials by synchrotron X-ray diffraction

W. Rieck, H. Schulz and M. Siedel — 1289 — X-Ray diffraction on microcrystals with synchrotron radiation

M. M. Harding — 1293 — Laue diffraction studies of inorganic materials

P. Barnes — 1299 — The use of synchrotron energy-dispersive diffraction for studying chemical reactions

Å. Kvick — 1307 — The European Synchrotron Radiation Facility—an overview of planned diffraction capability

Number 11/12

SPECIAL ISSUE

FERMIOLOGY OF HIGH-T_c SUPERCONDUCTORS

A. Bansil, A. Arko, R. Benedek, V. J. Emery and L. C. Smedskjaer — xi — Preface

A. Bansil — xiii — Introductory Remarks

xv — Participants at the Workshop on Fermiology of High-T_c Superconductors, Argonne National Laboratory, 25–27 March 1991

xvii — List of Participants

General theory

P. W. Anderson — 1313 — How to have your Fermi surface without a Fermi liquid

P. A. Lee — 1319 — Normal state properties of high T_c superconductors

A. P. Kampf and J. R. Schrieffer — 1321 — The evolution of spin bags from small to large U: implications for spectroscopies

K. Levin, Qimiao Si, Yuyao Zha Ju H. Kim and J. P. Lu — 1337 — From fermiology to spin dynamics: current status of Fermi liquid based approaches to the cuprates

C. M. Varma — 1349 — Marginal Fermi-liquids

Jaejun Yu and A. J. Freeman — 1351 — Coulomb correlated band structure and Fermi surfaces of high T_c superconductors

R. S. Markiewicz — 1363 — The van Hove singularity and high-T_c superconductivity: the role of nanoscale disorder and interlayer coupling

J. Ruvalds, J. Zhang and A. Virosztek — 1371 — Fermi surface nesting in high temperature superconductors

D. Coffey, R. Schwarz and P. Yvon — 1377 — Quasi-two dimensional density of states and the isotope effect in the superconducting Cu oxides

L. Coffey — 1381 — Effect of interlayer coupling on superconducting properties: application to sound attenuation

D. W. Hess and J. W. Serene — 1385 — Self consistent numerical calculations for nested Fermi liquids

T. Maniv, A. I. Rom, R. S. Markiewicz, I. D. Vagner and P. Wyder — 1391 — Superconductivity on Landau levels

J. C. Phillips 1395 Reconciliation of band theory and high-temperature superconductivity: the third factor

P. S. Riseborough 1397 A comment on satellites in nickel

Photoemission and dHva (mostly)

D. S. Dessau, Z.-X. Shen, B. O. Wells, W. E. Spicer and **A. J. Arko** 1401 Spectral weight changes at the superconducting transition of $Bi_2Sr_2CaCu_2O_{8+\delta}$

J. C. Campuzano, G. Jennings, A. J. Arko, R. S. List, B. W. Veal and **R. Benedek** 1411 Photoemission measurement of Fermi surface, band dispersion and quasiparticle lifetime in $YBa_2Cu_3O_{6.9}$

C. G. Olson, J. G. Tobin, F. R. Solal, C. Gu, J. Z. Liu, M. J. Fluss, R. H. Howell, J. C. O'Brien, H. B. Radousky and **P. A. Stern** 1419 High resolution photoemission studies of untwinned $YBa_2Cu_3O_{6.9}$

T. Takahashi, T. Watanabe, T. Kusunoki and **H. Katayama-Yoshida** 1427 Angle-resolved photoemission and inverse photoemission studies of $Bi_2Sr_2Ca_{1-x}Y_xCu_2O_8$ ($x = 0$, 0.4, 0.6)

R. Liu, B. W. Veal, A. P. Paulikas, J. W. Downey, H. Shi, C. G. Olson, C. Gu, A. J. Arko, J. J. Joyce and **R. J. Bartlett** 1437 Photoemission and electronic structure studies of $YBa_2Cu_3O_x$

M. Lindroos and **A. Bansil** 1447 Angle-resolved photoemission spectra in $YBa_2Cu_3O_7$: LDA predictions

F. M. Mueller 1457 de Haas van Alphen effect in high temperature superconductors

G. Kido, K. Komorita, H. Katayama-Yoshida and **T. Takahashi** 1465 de Haas–van Alphen measurement of $YBa_2Cu_3O_7$

A. J. Arko 1471 Comments on photoelectron spectroscopy of high-Tc's

L. Z. Liu, R. O. Anderson and **J. W. Allen** 1473 Crucial role of inelastic background subtraction in identifying non-Fermi liquid behaviour in existing ARPES lineshape data

R. C. Dynes 1477 Electron tunneling into high T_c superconductors

H. J. Tao, Farun Lu and **E. L. Wolf** 1481 Tunneling spectroscopy of single crystal $Bi_2Sr_2CaCu_2O_8$

Positron annihilation

S. Berko, D. J. Singh and **E. C. von Stetten** 1485 Positron annihilation in high critical temperature superconductors

A. Bansil 1493 Momentum density in Y-123: LDA predictions

S. Massidda, Jaejun Yu, A. J. Freeman, L. Hoffmann, P. Genoud and **A. A. Manuel** 1503 Theoretical two-particle momentum density in $YBa_2Cu_3O_{7-\delta}$

P. E. A. Turchi 1513 A molecular orbital approach to electron–positron annihilation in high T_c materials

T. Jarlborg, B. Barbiellini, E. Boronski, P. Genoud and **M. Peter**	1515	Positron annihilation and correlation in high-T_c oxides
S. E. Barnes	1525	Theory of positron annihilation in the spinon–holon picture
H. Haghighi, J. H. Kaiser, S. Rayner, R. N. West, J. Z. Liu, R. Shelton, R. H. Howell, F. Solal, P. A. Sterne and **M. J. Fluss**	1535	Electron–positron **p**- and **k**-space densities in $YBa_2Cu_3O_{7-\delta}$
L. C. Smedskjaer, A. Bansil, U. Welp, Y. Fang and **K. G. Bailey**	1541	Positron studies of metallic $YBa_2Cu_3O_{7-x}$
L. Hoffmann, W. Sadowski, A. Shukla, Gh. Adam, B. Barbiellini and **M. Peter**	1551	Possible indication of Fermi surface of $YBa_2Cu_3O_7$ by positron annihilation
L. P. Chan, D. R. Harshman, K. G. Lynn, S. Massidda and **D. B. Mitzi**	1557	Evidence for a Fermi surface in $Bi_2Sr_2CaCu_2O_{8+\delta}$ measured by positron 2D-ACAR
P. E. Mijnarends, A. F. J. Melis and **A. W. Weeber**	1569	Positron-annihilation 2D-ACAR measurements in $Bi_2Sr_2CaCu_2O_{8+x}$
R. H. Howell and **M. J. Fluss**	1573	An outline of positron measurements of superconducting oxides
R. M. Nieminen	1577	Positron trapping in oxide superconductors
A. P. Mills, Jr.	1589	Feasibility of high precision 2D ACAR
T. Nagarajan, S. Srinivasan, V. Sridharan, V. Prabha, R. Usha, B. Jayamala, K. Nandhini and **A. Stephen**	1591	Positron angular correlation studies on rare earth substituted 123 compounds
Summaries		
E. Abrahams	1595	Fermiology of High-T_c Superconductors—theoretical summary
M. Peter	1599	Fermiology of High-T_c Superconductors—experimental summary